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ABSTRACT

A study was conducted to compare three methods of assessing course-level self-efficacy beliefs within a multitrait multimethod (MTMM) framework. The methods involved: (1) successfully performing a number of domain-related tasks; (2) obtaining specific letter grades in the course; and (3) successfully performing generic academic tasks in the context of a particular domain. With confirmatory and higher-order confirmatory factor analyses, the MTMM approach allowed examining the equivalence of self-efficacy responses from different assessment methods (i.e., convergent validity) and the distinctiveness of self-efficacy beliefs in different academic domains (i.e., discriminant validity). Relations of the three self-efficacy measures to other course-specific motivation and performance indicators were examined with structural equation modeling. Participants were 512 middle school students in Korea. Results suggest that different self-referent thoughts were called forth depending on whether the course-specific self-efficacy items specified different aspects or levels in the expected domain performance. When they did, self-efficacy so measured demonstrated stronger relations with more cognitive, rather than affective, indicators of motivation. These relations should be studied in more detail when achievement indexes become available. (SLD)

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Evaluation of Course-Specific Self-Efficacy Assessment Methods

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Poster session presented at the annual convention of the American Psychological Association, San Francisco, CA, August 2001.

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Compared to other self-theories, self-efficacy research has demonstrated relatively consistent operationalizations and unambiguous causal effects on student learning (Bong & Clark, 1999; Pajares, 1996). It has greatly benefited from the context-specific assessment of constructs (Bandura, 1986, 1997) and has traditionally been conducted at task-specific levels. Nevertheless, as research on self-efficacy has proliferated, so have the methods of assessing efficacy beliefs.

Researchers express little disagreement on what constitutes task-specific assessment of self-efficacy beliefs. When the target of prediction involves more general level outcomes such as course grades, however, it is not always clear which method investigators should use to increase the self-efficacy's predictive power and, at the same time, not violate the guidelines suggested by Bandura (1997). Conceivably, when researchers' goal is to predict students' motivation and performance in given subject areas (e.g., mathematics course), they could resort to one of three methods. Investigators could assess students' perceived confidence toward: (1) successfully performing a number of major domain-related tasks, (2) obtaining specific letter grades in the course, or (3) successfully performing generic academic tasks within the context of a particular domain (e.g., "I am sure that I can do an excellent job on the problems and tasks assigned for math classes").

The purpose of the present study was to compare these 3 methods of assessing course-level self-efficacy beliefs within a multi-trait multi-method framework. With confirmatory and higher-order confirmatory factor analyses, the MTMM approach allowed examining (1) the equivalence of self-efficacy responses from different assessment methods (i.e., convergent validity) and (2) the distinctiveness of self-efficacy beliefs in different academic domains (i.e., discriminant validity). Further, relations of these three self-efficacy measures to other course-specific motivation and performance indicators were examined with structural equation modeling. Because three distinct subject areas were considered, it was possible to investigate both (1) the relationships of different self-efficacy beliefs with other constructs within each domain and (2) consistency of these relations across domain.

Method

512 middle school students in Seoul, Korea, participated. The motivation survey included the following variables: (1) Bandura-type self-efficacy (e.g., "How confident are you that you can get a grade better than a B in [a subject]), (2) MSLQ self-efficacy (Motivated Strategies for Learning Questionnaire; e.g., "I'm certain that I can understand what is taught in [a subject] class") (Pintrich & De Groot, 1990), (3) task-referenced self-efficacy (e.g., "How confident are you that you can correctly solve quadratic equation problems in math?"), (4) self-efficacy for self-regulated learning (e.g., "How confident are you that you can concentrate on your school work?"), (5) self-evaluative standard ("What is the lowest grade that you can receive and still be satisfied with in [a subject]?"), (6) grade goal ("What academic grade are you striving for in [a subject] course this semester?"), (7) perceived value (e.g., "It is important to me to get good grades in [a subject]"), and (8) anxiety (e.g., "I am so nervous during a [subject] test that I cannot remember what I have learned"). Principals and teachers of participating schools have

agreed to provide the researcher with students' (9) end-of-semester course grades in the domains of interest. These are yet to be received and hence not included in the present analyses. With an exception of self-efficacy for self-regulated learning, all variables were assessed separately in reference to Korean, Math, and English. Middle school subject matter teachers developed the task descriptions included in the task-referenced self-efficacy items.

Results and Discussion

MTMM Comparison of Scales

Korean, math, and English self-efficacy were treated as 3 traits. The BDR (Bandura-type), MSLQ, and TSE (task-referenced) items were treated as 3 methods. CFA models that specified either the trait or method effects only were not able to reproduce the data satisfactorily. A model that incorporated the joint effects of trait and method on each self-efficacy response displayed good fit to the data, χ^2 (1091, N = 512) = 2478.852, p < .001 (NNFI = .923, CFI= .928). Students' responses to different self-efficacy items were thus affected both by the content domain addressed and the particular method used. Students' self-efficacy beliefs in 3 school subjects were most highly correlated when assessed with BDR (average r = .714) and least highly correlated with MSLQ (average r = .483). Average correlations among methods were .802 between BDR and MSLQ, .880 between BDR and TSE, and .823 between MSLQ and TSE across 3 subjects. There was clear support for the convergent and discriminant validity according to the Campbell-Fiske criteria.

However, because each of these 1st-order factors reflected combined effects from a particular method and a particular subject efficacy, it was not possible to separate the relationships among methods from traits and vice versa. A HCFA model allows examining the trait correlations after method effects are removed or method correlations after trait effects are accounted for, by identifying 2nd-order trait and 2nd-order method factors on the basis of these first-order factors. Significant correlations were observed between 2nd-order Korean and English (.417), and math and English factors (.374), after the method effects were controlled for. The 2nd-order BDR and TSE factors correlated at .905. However, when the trait effects were removed, the MSLQ factor negatively correlated with both the BDR (-.837) and TSE (-.883) factors. The main difference between the MSLQ and the other two methods is whether concrete and specific anchors for gauging perceived confidence are provided. This difference also manifested itself in self-efficacy factors' relations with other constructs.

Relations With Other Constructs

When SEM models with 8 available factors were specified, the following relations emerged consistently across 3 subject areas: Self-efficacy for SRL demonstrated positive relations with all 3 self-efficacy beliefs and the self-evaluative standard; BDR self-efficacy and self-evaluative standard positively predicted students' grade goal; MSLQ self-efficacy showed positive relations with perceived value. Overall, it appears that different self-referent thoughts were called forth depending on whether the course-specific self-efficacy items specified different aspects or levels in the expected domain

performance. When they did, self-efficacy so measured demonstrated stronger relations with more cognitive, as opposed to affective, indicators of motivation. These relations need to be studied further once the achievement indexes become available.

References

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Bong, M., & Clark, R. E. (1999). Comparison between self-concept and self-efficacy in academic motivation research. Educational Psychologist, 34, 139-154.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. Review of Educational Research, 66, 543-578.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. Journal of Educational Psychology, 82, 33-40.

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